

What is claimed is:

1. A semiconductor device comprising:

5 a first semiconductor chip having a first functional surface formed with a first functional element and a first rear surface which is opposite from the first functional surface;

10 a second semiconductor chip having a second functional surface which is formed with a second functional element, the second functional surface having a region opposed to the first functional surface of the first semiconductor chip and a non-opposed region defined outside the opposed region;

15 a connection member provided between the first functional surface and the second functional surface and electrically connecting the first functional element and the second functional element;

20 an insulation film continuously covering the non-opposed region of the second semiconductor chip and the first rear surface of the first semiconductor chip;

25 a rewiring layer provided on a surface of the insulation film and electrically connected to the second functional element;

a protective resin layer covering the rewiring layer; and

25 an external connection terminal projecting from the

rewiring layer through the protective resin layer.

2. A semiconductor device as set forth in claim 1, wherein the surface of the insulation film provided with the rewiring layer includes a substantially flat surface 5 extending over the non-opposed region and the first semiconductor chip.

3. A semiconductor device as set forth in claim 1, wherein at least a part of the rewiring layer is electrically connected to the first rear surface of the 10 first semiconductor chip.

4. A semiconductor device as set forth in claim 1, further comprising a heat-sink terminal projecting from the first rear surface of the first semiconductor chip through the protective resin layer.

15 5. A semiconductor device as set forth in claim 4, further comprising a diffusion prevention film of an electrically conductive material provided between the first rear surface of the first semiconductor chip and the insulation film and between the first rear surface 20 and the heat-sink terminal.

6. A semiconductor device as set forth in claim 1, further comprising a diffusion prevention film of an electrically conductive material provided between the first rear surface of the first semiconductor chip and 25 the insulation film and between the first rear surface

and the rewiring layer.

7. A semiconductor device as set forth in claim 1, further comprising a rear surface protective film provided on a second rear surface of the second semiconductor chip 5 which is opposite from the second functional surface.

8. A semiconductor device as set forth in claim 1, further comprising a via-conductor projecting from the non-opposed region of the second semiconductor chip through the insulation film and electrically connecting 10 the second functional element and the rewiring layer.

9. A semiconductor device comprising:

    a semiconductor chip having a functional element formed in one surface thereof;

    an insulation film covering a rear surface of the 15 semiconductor chip which is opposite from the surface formed with the functional element;

    an electrically conductive member electrically connected to the rear surface of the semiconductor chip through an opening formed in the insulation film; and

20       a diffusion prevention film provided between the rear surface of the semiconductor chip and the insulation film and between the rear surface and the electrically conductive member.